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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Christopher J. Cookson

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EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/717,809	<b>Applicant(s)</b> COOKSON ET AL.	
	<b>Examiner</b> Nathan Danielsen	<b>Art Unit</b> 2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2006 and 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-6 and 8-18 are pending. Claim 7 has been cancelled in Applicant's amendment dated 16 February 2006.

#### ***Claim Objections***

2. Claim 1 is objected to because the phrase "a disc having data on on a first side" (line 2) should be --a disc having data on a first side-- and "the disc and and microprocessor" (lines 14-15) should be --the disc and a microprocessor--. Claim 8 is objected to because "wherein said controller motor and heads" (lines 2-3) should be --wherein said controller, motor, and first and second read heads--. Claim 10 is objected to because "having data arranged in clockwise direction" (lines 2-3) should be --having data arranged in a clockwise direction--. Claim 14 is objected to because "spira" (line 4) should be --spiral--. Additionally, all instances of "Personal Computer" should be changed to --personal computer--. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-6, 8-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al (US 2001/0008510, hereinafter Nakayama), in view of Yamauchi et al (JP 11-007669, hereinafter Yamauchi, a.k.a. "Hiroshi" (note the corresponding entry on form PTO-892 from the first Office Action for the last name of the first named inventor of this reference)), and further in view of Hisakado et al (US Patent 5,406,534; hereinafter Hisakado).

Regarding claim 1, Nakayama discloses an optical disc drive for reading data on a disc, said drive including:

a tray supporting a disc (figure 2);

a housing with an opening defined by at least one wall, said tray being movable within said opening between an open position in which said disc can be placed on and removed from said tray, and a closed position in which data on said disc can be read (figures 1 and 2); and

a second read head mounted in said tray and directed toward the other of said sides (figure 2);

electrical circuitry including a motor rotating the disc (spindle motor 421).

However, Nakayama fails to disclose where said disc has data on a first side arranged along a clockwise spiral and having data on a second side arranged along a counterclockwise spiral and where said drive includes:

a first read head mounted on said wall and directed toward one of said sides;

electrical circuitry including a microprocessor that receives data from both heads continuously and processes said data.

In the same field of endeavor, Yamauchi discloses said disc has data on a first side and a second side (suggested by "being able to perform record of the information are twice many as this, compared with the disk unit of one side record by the ability of double-sided record to be performed, the data transfer rate recorded can be doubled by performing simultaneous record by both sides" (machine translation ¶ 0026)) and where said drive includes:

a first read head mounted on said wall and directed toward one of said sides (pickup unit 20) ;

electrical circuitry including a microprocessor (controller 51 in drawing 1) that receives data from both heads continuously and processes said data ("Setting out of the scan truck in the bottom track-address control circuit 53 of besides is performed

based on the command from the controller 51 which controls record actuation and playback actuation of this optical disk unit" (machine translation ¶ 0020).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned components, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Additionally, Yamauchi is silent as to the specific track structure of the abovementioned disc. In the same field of endeavor, Hisakado discloses a disc having data on a first side arranged along a clockwise spiral and having data on a second side arranged along a counterclockwise spiral (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned track structure in an optical disc, as taught by Hisakado, for the purpose of providing a disc having two sides for which data can be simultaneously recorded (col. 2, lines 23-26).

Regarding claim 2, Nakayama discloses where said housing is sized to fit within a standard bay of a Personal Computer ("the CD-ROM drive could be modified to suit other forms of disc drives, i.e., including disc drives mountable on personal computers" (¶ 148)).

Regarding claim 3, Nakayama where said housing is sized and shaped for integration within a laptop-type device (figures 1 and 2).

Regarding claim 4, Nakayama discloses where said wall extends over said tray (cover member 220 in figures 1 and 2).

Regarding claim 5, Nakayama discloses where said tray has a bottom wall (main face 211 in figure 3) and said second read head (optical pickup 500 in figures 2 and 3) is mounted on

Art Unit: 2627

said bottom wall positioned to be adjacent the other side of the disc when said tray is in the closed position (figure 2).

Regarding claim 6, Nakayama discloses, in combination, a desktop Personal Computer and an optical data disc comprising:

- a case with a bay (inherent in a personal computer, whether it is a desktop model or a laptop model);

- a disc drive disposed in said bay (see claim 2), said disc drive including a housing having a wall defining an opening, a tray fitted in said opening and being selectively movable between an open position to receive said optical data disc and a closed position in which said optical data disc is positioned for data exchange, and a second read head attached to said tray (see claim 1); and

- a motor (see claim 1 for citation);

However, Nakayama fails to disclose where the optical data disc has a first side with data arranged in a clockwise spiral and a second side with data arranged in a counterclockwise spiral and where the desktop Personal Computer further comprises:

- a disc drive having a first read head attached to said wall, where said read heads are arranged to read respective opposite sides of the optical data disc;

- a controller controlling said motor for rotating said optical data disc in a predetermined direction with the tray in the closed position; and

- a processor receiving a continuous stream of data from both heads while the disc is being rotated in said predetermined direction.

In the same field of endeavor, Yamauchi discloses where the optical data disc has a first side and a second side and where the desktop Personal Computer further comprises:

a first read head attached to said wall (see claim 1 for citation), where said read heads are arranged to read respective opposite sides of the optical data disc (see claim 1 for citation);

a controller (controller 51 and spindle servo-system circuit 52 in drawing 1) controlling said motor for rotating said optical data disc in a predetermined direction with the tray in the closed position (inherent as all optical disc drives rotate the disc in a predetermined direction, with the drive tray in a closed position for those that have a tray); and

a processor receiving a continuous stream of data from both heads while the disc is being rotated in said predetermined direction (see claim 1 for citation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned components, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Additionally, Nakayama and Yamauchi are silent as to the specific track structure of the abovementioned disc. In the same field of endeavor, Hisakado discloses a disc having data on a first side arranged along a clockwise spiral and having data on a second side arranged along a counterclockwise spiral (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned track structure in an optical disc, as taught by Hisakado, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Regarding claim 8, Nakayama discloses everything claimed, as applied to claim 6. However, Nakayama fails to disclose where said controller motor and heads cooperate to read data from both sides of the optical data disc simultaneously.

In the same field of endeavor, Yamauchi discloses where said controller, motor, and heads cooperate to read data from both sides of the optical data disc simultaneously (see claim 6 for citation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have caused the components to work simultaneously, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Regarding claim 9, Nakayama discloses where said tray is formed with a hole through which one of said heads reads a respective disc side (element 136a in figure 3).

Regarding claim 10, Nakayama discloses a portable computing device receiving and writing to and from an optical disc (see claim 6 for citation), said device comprising:

- a case formed with an opening having an interior wall (see claim 6 for citation);
- a tray movable within said opening to allow said optical disc to be placed on the tray (see claim 6 for citation); and
- a first read head disposed on the tray under said optical disc to selectively read data from its bottom side (see claim 6 for citation).

However, Nakayama fails to disclose where the optical disc has data arranged in a clockwise direction on one side and data arranged in a counterclockwise direction on another side and where said device further comprises:

- a second read head supported on said interior wall and positioned to selectively read data from the top side of the optical disc; and



a controller receiving continuous streams of data from both heads.

In the same field of endeavor, Yamauchi discloses where the optical disc has data arranged on one side and data on another side (see claim 6) and where said device further comprises:

a second read head supported on said interior wall and positioned to selectively read data from the top side of the optical disc (see claim 6); and  
a controller receiving continuous streams of data from both heads (see claim 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned components, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Additionally, Yamauchi is silent as to the specific track structure of the abovementioned disc. In the same field of endeavor, Hisakado discloses a disc having data on a first side arranged along a clockwise spiral and having data on a second side arranged along a counterclockwise spiral (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned track structure in an optical disc, as taught by Hisakado, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Regarding claim 11, Nakayama discloses where said tray is formed with a hole, said first read head being positioned to read the bottom side of the optical disc through said hole (element 136a in figure 3).

Regarding claim 13, Nakayama discloses everything claimed, as applied to claim 10. However, Nakayama fails to disclose where the portable computing device further comprises a controller generating commands to the read heads to read data from the top and bottom sides simultaneously.

In the same field of endeavor, Yamauchi discloses where the portable computing device further comprises a controller generating commands to the read heads to read data from the top and bottom sides simultaneously (see claim 1 for citation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have been able to read from both sides of the disc, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Regarding claim 14, Nakayama discloses an optical disc player playing optical discs, said player comprising:

- a housing with an opening having first and second walls, said walls being opposite to each other;
- a second read head (figure 2); and
- a mechanism selectively moving said optical disc between said read heads to allow said read heads to read data from said optical disc (figures 1 and 2).

However, Nakayama fails to disclose where the optical discs have two opposed sides, and where said player further comprises:

- a first read head disposed on one of said walls (pickup 20 mounted to the upper portion of case 10 in drawing 1); and
- a microprocessor receiving a continuous stream of data from both read heads (see claim 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the abovementioned components, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Additionally, Yamauchi is silent as to the specific track structure of the abovementioned disc. In the same field of endeavor, Hisakado discloses a disc having data on a first side arranged along a clockwise spiral and having data on a second side arranged along a counterclockwise spiral (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the abovementioned track structure in an optical disc, as taught by Hisakado, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

Regarding claim 15, Nakayama discloses where said mechanism includes a tray selectively movable between an open position in which it accepts the optical disc and a closed position in which the read heads read data on the disc (figures 1 and 2).

Regarding claim 15, Nakayama discloses where said second read head is attached to said tray (figure 2).

Regarding claim 17, Nakayama discloses everything claimed, as applied to claim 14. However, Nakayama fails to disclose where said second read head is attached to the second wall.

In the same field of endeavor, Yamauchi discloses where said second read head is attached to the second wall (see claim 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached the second read head to the second wall, as taught by Yamauchi, for the purpose of miniaturizing an optical disk device capable of performing both-surface recording or both-surface reproducing by simplifying its structure (PAJ abstract).

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama, in view of Yamauchi and Hisakado as applied to claim 10 above, and further in view of Fujimura (JP 10-021633; a.k.a. "Shinsuke" (again refer to form PTO-892)).

Regarding claim 12, Nakayama, in view of Yamauchi and Hisakado, discloses everything claimed, as applied to claim 10. However, Nakayama, in view of Yamauchi and Hisakado, fails to disclose where the portable computing device further comprises a controller generating commands to the read heads to read data from the top and bottom sides sequentially.

In the same field of endeavor, Fujimura discloses where the portable computing device further comprises a controller generating commands to the read heads to read data from the top and bottom sides sequentially (§ 10, lines 5-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Nakayama, Yamauchi, and Hisakado to enable both sides of the disc to be read sequentially, as taught by Fujimura, for the purpose of simultaneously recording and reproducing signals (recorded data) on both recording surfaces of a double-sided disc (abstract, lines 1-4).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama, in view of Yamauchi and Hisakado, and further in view of Yamashita et al (US Patent 6,618,341, hereinafter Yamashita).

Regarding claim 18, Nakayama, in view of Yamauchi and Hisakado, discloses everything claimed, as applied to claim 17. However, Nakayama, in view of Yamauchi and Hisakado, fails to disclose where said mechanism includes an arm selectively moving the disc in and out of the opening.

In the same field of endeavor, Yamashita discloses where said mechanism includes an arm selectively moving the disc in and out of the opening (first arm 16 in figure 9A).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the above-stated component in addition to the invention of Nakayama, Yamauchi, and Hisakado, as taught by Yamashita, for the purpose of improving the proper insertion of the disc for ease and stability (col. 16, lines 47-48).

### ***Response to Arguments***

7. Applicant's arguments filed 16 February 2006 have been fully considered but they are not persuasive.

Regarding the Nakayama reference, Applicant argued that "the drive cannot read the other side of the disc unless the disc is turned over". The examiner concedes the point that having a single optical head mounted in a removable tray allows the drive to read only one side of a double-sided disc at any given time. However, the main purpose of the Nakayama reference is not to show the single head, but rather the mounting of that head in a removable tray such as those one would find in laptop-type computers.

Regarding the Yamauchi reference, Applicant argued that "there is nothing in this reference about data arranged in clockwise and counterclockwise spiral patterns". The examiner concedes this point. However, figure 3 of Hisakado shows the well-known configurations of the track structure of optical discs. Applicant further argued that "there is nothing in this reference that discloses how a device is to be made with a removable tray for

carrying". Again, the examiner concedes this point. However, refer to Nakayama for this limitation. Applicant further argued that "there is nothing in this reference about how to make a disc reader that can read the specific disc described herein". The examiner disagrees with Applicant as the combination of Nakayama, Yamauchi, and Hisakado clearly render Applicant's invention obvious. Further, Applicant argued that "there is nothing in this reference that pertains to discs with spiral tracks". The examiner concedes this point. However, Hisakado makes up for this deficiency, as shown above.

Regarding the "several other references with two heads for reading discs having data on the two sides", Applicant argued that "none of these references are capable of reading a disc having data arranged in reverse spirals". The examiner disagrees. As examples of references that are capable of reading a disc having data arranged in reverse spirals, see Yamauchi and Hisakado. Applicant further argued that "none of these references is capable of reading data randomly from two sides of the disc or a continuous manner". The examiner disagrees. All references cited having two opposite read heads, not simply two objective lenses, are capable of reading from both sides *continuously*, as opposed to intermittently. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the reading of data randomly from both sides") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that "the references fail to render the claims obvious", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the

Art Unit: 2627

combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The combination of references shown above would have pointed a person skilled in the art to design an apparatus to read from and write to the double-sided disc of Hisakado, as shown by the Yamauchi reference. Additionally, one of the purposes of the Yamauchi apparatus is to reduce the size of the apparatus for reading and writing, thus the structure of the Nakayama reference could have then been used to house the apparatus of Yamauchi. Therefore, the advantages of having one head on a tray and the other in the housing would have been obvious to one of ordinary skill in the art at the time the invention was made.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 8:30 AM - 4:30 PM EST.

Art Unit: 2627

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Danielsen  
04/03/2006 ND

  
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